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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER	
AHN, SANGWOO	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/705,242	LLOYD ET AL.	
	Examiner	Art Unit	
	SANGWOO AHN	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,18,30,32-39,41-73,77-79,102-107 and 124-138* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,18,30,32-39,41-73,77-79,102-107 and 124-138* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/9/2008 has been entered.

Response to Amendment

Claims 1 – 16, 18 – 30, 32 – 39, 41 – 73, 77 – 79 and 102 – 107, and 124 – 138 are pending.

Claims 1, 4, 5, 21, 32, 43, 46, 47, 55, 56, 68, 69, 77, 105, 106 and 107 have been amended.

Claims 17, 31, 40, 74 – 76 and 84 – 101 have been canceled.

Claims 80 – 83 and 108 – 123 have been previously withdrawn from consideration.

Response to Arguments

Applicant's arguments filed on 6/0/92008 have been fully considered but they are not persuasive.

Applicant mainly argued the following points:

1. The table in Harvey does not store the association of those attributes with each directory object, and does not store the values of those attributes (page 29 lines 23 – 24). The attribute table in Harvey does not change when objects are created, changed or deleted and indeed would be the same even if the directory contained no objects whosoever (page 30 lines 1 – 2).

2. “[B]ased on the Examiner's interpretation of each table cell as being a memory segment, which would require each cell of the DIT table to store DIT data for a plurality of directory objects, which is not the case.”

Examiner respectfully traverses the arguments for the following reasons:

1. The argument seems to be directed towards the limitations in the claim, “attribute data representing attributes of said directory objects, each attribute including an attribute type and a corresponding value,” “directory information tree (DIT) data associating said attributes with corresponding nodes of at least one hierarchical directory information tree (DIT) for said directory object." Harvey clearly discloses these limitations in page 13 line 17 and page 14 (attribute table: attributes of the directory objects), page 13 line 19 and page 14(defines different attribute types), page 13 line 28 and page 14 (defines attribute values, AID), page 13 line 13, page 18, page 32 line 17 and page 34 line 15 to page 35 line 6 (hierarchy table that defines structural relationship between objects, et seq.). Applicant further argued that the attribute table in Harvey does not change when objects are created, changed or deleted and indeed would be the same even if the directory contained no objects whosoever, but the Examiner

contends that such assertion is irrelevant with respect to the claim. It appears that Applicant tries to bring in additional meanings from the specification rather than view the claim as presently recited. The present claim does not recite anything related to creating, changing and deleting directory objects, and attribute table changing as a result of it. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2. Due to Applicant's lack of disclosure within the claim language as to how "segmentation" (See Remarks/Arguments, Page 25 lines 10) is physically performed with respect to memory and portions of directory data, Examiner maintains the previous ground(s) of rejection, in which Examiner interpreted each data in each cell (within the table) could be interpreted as a portion of directory data that constitutes a memory segment. Examiner further asserts that plurality of data in a column, plurality of data in a row, and plurality of data contained in the entire DIT table itself could all be interpreted as constituting a memory segment. There is no clearly distinction as to how much data or which specific portions of data within the table constitute a memory segment. Even if these features were defined in the claim, it is well-perceived that these tables are stored in the memory in a "contiguous" fashion. The claims are written in such a broad way that they cannot be distinguished over the prior art.

Claim Objections

Claims 80 – 83 and 127 are objected to because of the following informalities:

Status identifiers of claims 80 – 83 are incorrect (should be canceled or withdrawn).

Claim 127 recites "directly" in line 3.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 8, 10 – 16, 32 – 37, 41, 78 – 79, 105 – 106, 124 – 126 and 132 – 137 are rejected under 35 U.S.C. 102(b) as being anticipated by International Publication Number WO 96/07147 by Richard H. Harvey (hereinafter "Harvey").

Regarding claim 1, Harvey discloses,

A directory system for providing directory services in a communications network using stored directory objects, the directory system comprising:

a network interface providing access to the directory system from a communications network;

memory means;

at least one processor; and

service components providing services to users of the directory system based on stored directory object attributes associated with said services (page 1 lines 10 – 12:

X.500 is the international standard for electronic directories), these standards define services, protocols and information model of a very flexible and general purpose directory), said services including identity-based services based on identity management attributes for said users (page 1 line 14 – 15: store names, addresses, job titles, devices, etc.);

wherein the directory system stores in said memory means directory data representing directory objects, (page 1 lines 10 – 16, et seq.), said directory data including the following subsets of data:

attribute data representing attributes of said directory objects, each attribute including an attribute type and a corresponding value (page 13 lines 17; 19; 28, page 14: attribute table containing attributes of the directory objects and defines different attribute types, defines attribute values, AID, et seq.),

directory information tree (DIT) data associating said attributes with corresponding nodes of at least one hierarchical directory information tree (DIT) for said directory objects (page 13 line 13, page 18: Hierarchy table, page 32 line 17, page 34 line 15 – page 35 line 6, et seq.); and

management data for managing said directory objects and said at least one DIT(page 13 line 18, page 16 lines 1 – 4, page 18: object table, et seq.);

wherein the directory system stores the directory data in a memory resident, subsets of the directory data being stored in a segregated manner by storing each subset of related data in one or more memory segments dedicated to storage of that subset, each said memory segment being a contiguous portion of said memory means

(See Response to Arguments section above), said memory segments including (a) one or more attribute segments, each of said attribute segments being dedicated to storage of attribute data for a plurality of directory objects (page 13 lines 10 – 20, et seq.), (b) one or more DIT segments, each of said DIT segments being dedicated to storage of DIT data for a plurality of directory objects (page 13 line 13, page 18: Hierarchy table, page 32 line 17, page 34 line 15 – page 35 line 6, et seq.), and (c) one or more object segments, each of said object segments being dedicated to storage of management data for a plurality of directory objects (page 13 line 18, page 16 lines 1 – 4, page 18: object table, et seq.); and

wherein each of said services is associated with one or more corresponding ones of said attributes, the attribute data stored in the attribute segments being further segregated on the basis of these associations to facilitate processing of said attributes by said service components (page 13 lines 17; 19; 28, page 14: attribute table containing attributes of the directory objects and defines different attribute types and values, AID, et seq.).

Claims 106 and 124 – 125 are rejected based on the same rationale discussed in claim 1 rejection.

Regarding claim 2, Harvey discloses said directory system is configured to allocate portions of said memory means to provide said memory segments (page 13 line 18, et seq.).

Regarding claim 3, Harvey discloses each of said attribute segments includes one or more attribute sub-segments dedicated to storage of one or more attribute data for respective object classes (page 13 line 18, page 16 lines 1 – 4, et seq.).

Regarding claim 4, Harvey discloses each of said attribute segments includes attribute sub-segments dedicated to storage of attribute data for respective attribute types, wherein each of said attribute sub-segments is dedicated to storage of attribute data for a corresponding attribute type and for a plurality of directory objects (See Response to Arguments section above, page 13 line 18, page 16 lines 1 – 4, et seq.).

Regarding claim 5, Harvey discloses each of said attribute segments includes attribute sub-segments dedicated to storage of attribute data for attributes corresponding to respective services (page 13 lines 17; 19; 28, page 14, et seq.).

Regarding claim 6, Harvey discloses said attribute segments store attribute data for respective portions of a directory information tree (page 13 lines 12 – 18, page 32 line 16 – page 33 line 3, pages 39 – 41, et seq.).

Regarding claim 7, Harvey discloses the attribute data stored in one or more attribute segments are grouped according to one or more of object class, attribute type, attribute, and portion of a DIT (page 13 line 18, page 16 lines 1 – 4, et seq.).

Regarding claim 8, Harvey discloses a normalized attribute value (page 19, et seq.).

Regarding claim 10, Harvey discloses a context prefix identifier of a corresponding entry, and a relative distinguished name identifier of said entry (page 14 lines 2 – 4, page 16 lines 8 – 20, et seq.).

Regarding claim 11, Harvey discloses data indicating whether each of said attributes is associated with one or more other attributes (page 13 line 18, page 16 lines 1 – 4, page 15 lines 3 – 7, et seq.).

Regarding claim 12, Harvey discloses data indicating whether each of said attributes is a sponsoring attribute for one or more other attributes (Figures 2A – 2B, et seq.).

Regarding claim 13, Harvey discloses attributes having the same object naming characteristics are stored together (page 13 line 18, page 16 lines 1 – 4, page 18: attribute table, et seq.).

Regarding claim 14, Harvey discloses the object naming characteristics of an attribute correspond to one of distinguished attributes, aliased distinguished names, and non-naming attributes (page 18: attribute table).

Regarding claim 15, Harvey discloses same directory information characteristics are stored together (page 13 line 18, page 16 lines 1 – 4, page 18: attribute table, et seq.).

Regarding claim 16, Harvey discloses X.500/LDAP operational attributes (page 11 lines 10 – 11, column 15 line 2, et seq.).

Regarding claim 32, Harvey discloses each DIT segment includes one or more DIT sub-segments, each of said DIT sub-segments including DIT cells storing references to non-leaf entries of a directory information tree (page 13 line 13, page 18: Hierarchy table, page 32 line 17, page 34 line 15 – page 35 line 6, et seq.).

Regarding claim 33, Harvey discloses said DIT sub-segments store references to respective portions of a DIT (page 13 line 13, page 18: Hierarchy table, page 32 line 17, page 34 line 15 – page 35 line 6, et seq.).

Regarding claim 34, Harvey discloses said portions correspond to selected portions of a DIT having a flat namespace (page 39, et seq.).

Regarding claim 35, Harvey discloses two or more DIT sub-segments represent portions of a DIT having a flat namespace (page 39, et seq.).

Regarding claim 36, Harvey discloses two or more of said DIT sub-segments store references to a selected portion of a DIT (page 39, et seq.).

Regarding claim 37, Harvey discloses each of said references includes a name and a prefix (page 13 line 13, page 18: Hierarchy table, page 32 line 17, page 34 line 15 – page 35 line 6, et seq.).

Regarding claim 41, Harvey discloses each of said DIT segments identifies one or more object segments having stored therein management data for objects of the DIT segment, and one or more attribute segments having stored therein attribute data for said objects (page 13 lines 10 – 20, page 14, et seq.).

Regarding claims 78 – 79, Harvey teaches/suggests attribute processor storing and processing attribute data of directory and application-specific integrated circuit (inherent) through his disclosure.

Regarding claim 105, Harvey discloses dynamically creating, destroying, and/or resizing said memory segments (pages 54 – 18: add, delete, modify, etc.).

Regarding claim 126, Harvey discloses providing identity-based services to users, based on identity management attributes for said users (page 1 line 14 – 15: store names, addresses, job titles, devices, etc.);

Regarding claim 133, Harvey discloses user's mail box and address book as objects in a directory (page 1 lines 10 - 15, et seq.).

Regarding claim 134, Harvey discloses stored attributes are segregated by service, so that the attributes associated with each service are stored in one or more corresponding attributes segments distinct from attribute segments storing attributes associated with other services (See Response to Arguments section, page 13 lines 17; 19; 28, page 14: attribute table containing attributes of the directory objects and defines different attribute types and values, AID, et seq.).

Regarding claim 135, Harvey discloses storing subsets of attributes associated with respective services in respective attribute sub-segments of said attribute segments (See Response to Arguments section, page 13 lines 17; 19; 28, page 14: attribute table containing attributes of the directory objects and defines different attribute types and values, AID, et seq.).

Claims 136 – 137 are rejected based on the same rationale discussed in claims 134 – 135 rejections.

Regarding claim 132, Harvey discloses storing message data as one or more objects in said directory (page 1 lines 10 - 16, et seq.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 18, 20 – 25, 27 – 30, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 7,051,039 issued to Ravi Murthy et al (hereinafter "Murthy").

Regarding claim 18, Harvey discloses a directory system as claimed in claim 1.

Harvey does not explicitly disclose said management data includes security data.

However, Murthy discloses the management data including security data (column 4 lines 7 – 8, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the two references since Murthy's security data would have enabled Harvey's overall system to provide uniform access control to relationally organized data and hierarchically organized data (column 3 lines 26 – 28, et seq.).

Regarding claim 20, Murthy discloses storing access control data for directory objects (Figures 2 - 4, column 4 lines 4 – 7, et seq.).

Regarding claim 21, Murthy discloses the directory system generates one or more access control identifiers for a user on the basis of access configuration information for said user, and determines said user's access to a directory object on the

basis of at least one access control identifier associated with said object and at least one access control identifier associated with said user (column 4 lines 56 – 64, et seq.).

Regarding claim 22, Murthy discloses said one or more access control identifiers identify one or more of a specific user, a group of users, and a generic user (column 4 lines 52 – 53, et seq.).

Regarding claim 23, Murthy discloses each access control identifier includes respective components for accessing a selected DIT, for performing a selected directory operation, for accessing a selected attribute group, and for accessing a selected attribute type (column 4 line 56 – column 5 line 14, column 5 lines 34 – 37, et seq. (Harvey: page 24 – 27)).

Regarding claim 24, Murthy discloses said access control data includes one or more access control identifiers for each directory object, and hierarchical access data defining access to a DIT, a directory operation, an attribute group, and an attribute type (column 4 line 56 – column 5 line 14, column 5 lines 34 – 37, et seq. (Harvey: page 24 – 27)).

Regarding claim 25, Harvey and Murthy disclose object cells (Harvey: page 13 line 18, page 16 lines 1 – 4, page 18: object table, et seq.) for storing DIT schema data and access control data for controlling access to a DIT or a portion of a DIT (Murthy: column 4 lines 3 – 8, column 5 lines 9 – 12, et seq.).

Regarding claim 27, Murthy discloses generating access control identifiers on the basis of user configuration data specifying user access to one or more parts of a DIT

and to store said access control identifiers in object sub-segment cells corresponding to said one or more parts of said DIT (column 3 lines 4 – 16, et seq.).

Regarding claim 28, Murthy discloses the directory system generates a directory operation access control identifier for use in determining whether a user is granted access to perform a selected directory operation on a selected attribute type in a selected portion of a DIT, said directory operation access control identifier identifying said directory operation, said portion of said DIT and said attribute type, and the directory system determines whether said access is granted on the basis of a comparison of said directory operation access control identifier with one or more access control identifiers associated with one or more of said portion of said DIT, said attribute type, and an attribute type group including said attribute type (column 4 lines 50 – 67, column 5 lines 34 – 37, et seq.).

Regarding claim 29, Murthy discloses the directory system generates one or more access control identifiers for a user on the basis of access configuration information for said user, and a trusted operating system is used to determine said user's access to a directory object on the basis of access control identifiers associated with said object and said user (column 3 lines 4 – 16, column 4 lines 50 – 67, et seq.).

Regarding claim 30, Murthy discloses the directory system generates one or more access control identifiers for a user on the basis of access configuration information for said user, and the directory system includes an attribute processor adapted to determine said user's access to a directory object on the basis of access

control identifiers associated with said object and said user (column 3 lines 4 – 16, column 4 lines 50 – 67, et seq.).

Regarding claim 39, Murthy discloses access control identifier for controlling access to a corresponding DIT sub-segment (column 4 lines 3 – 8, column 5 lines 9 – 12, et seq.).

Claims 9 and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 5,659,616 issued to Sudia.

Regarding claim 9, Harvey discloses a directory system as claimed in claim 8.

Harvey does not explicitly disclose generating and storing hash value for names.

However, Sudia discloses generating and storing hash value for names (column 12 lines 1 – 18, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the two references since the combination would have enabled the overall system to provide simple processing and faster execution time of the directory system.

Claim 38 is rejected based on the same rationale discussed above.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 6,061,726 issued to Cook et al (hereinafter "Cook").

Regarding claim 19, Harvey discloses a directory system as claimed in claim 1 and at least one object segment for storing other data for said directory object as previously discussed.

Harvey does not explicitly disclose an object segment for storing distinct name binding rules for directory objects.

However, Cook discloses name binding rules in column 1- lines 1 – 65, et seq. At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the aforementioned references, since Cook's name binding rules would have enabled Harvey and Murthy's overall system to provide quickly, simply, reliably, and easily the desired rights to obtain services and maintenance thereof.

Claim 77 and 130 – 131 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 6,741,980 issued to Langseth et al.

Regarding claim 77, Harvey discloses the system as claimed in claim 1.

Harvey does not explicitly disclose one or more messaging gateway modules for communicating with remote messaging systems using one or more messaging protocols.

However, Langseth discloses one or more messaging gateway modules for communicating with remote messaging systems using one or more messaging protocols (column 3 lines 12 – 15, et seq.) At the time of the present invention, it would

have been obvious to a person of ordinary skill in the data processing art to combine the references since the combination would have enabled the overall system to deliver highly personalized and timely information at the right time when a predetermined condition occurs.

Regarding claim 130, Harvey discloses the process as claimed in claim 106.

Harvey does not explicitly disclose messaging services for users of the directory system.

However, Langseth discloses messaging services for users of the directory system (column 3 lines 12 – 15, et seq.) At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the references since the combination would have enabled the overall system to deliver highly personalized and timely information at the right time when a predetermined condition occurs.

Regarding claim 131, Langseth discloses said messaging services include at least one of email and instant messaging (column 3 lines 12 – 15, et seq.).

Claims 26 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey and Murthy, further in view of Cook.

Regarding claim 26, Harvey and Murthy disclose a directory system as claimed in claim 24.

Harvey and Murthy do not explicitly disclose “numeric access control identifiers”.

However, Cook discloses numeric access control identifiers in column 11 lines 10 – 13, et seq. At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the aforementioned references, since Cook's numeric identifiers would have enabled Harvey and Murthy's overall system for simple computational processing resulting in efficiency, simplicity, and faster processing time.

Regarding claim 42, Harvey and Murthy disclose a directory system as claimed in claim 1, wherein said management data includes access control data for said directory. Cook discloses name binding rules in column 1- lines 1 – 65, et seq.

Claims 43 – 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 7,058,664 issued to Hsu.

Regarding claim 43, Harvey discloses a directory system as claimed in claim 1.

Harvey does not explicitly disclose transaction segments dedicated to storage of transaction data representing phases of a directory transaction to allow recovery of said directory transaction.

However, Hsu discloses storing transaction segments dedicated to storage of transaction data representing phases of a directory transaction to allow recovery of said directory transaction (column 2 lines 13 – 24, column 7 lines 32 – 44, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the two references since the combination would

have enabled the overall system to recover user data in a database for that provides a software application that is independent of any standard backup and recovery utility.

Regarding claim 44, Hsu discloses transaction management component for updating said transaction data during said phases of a transaction (column 2 lines 13 – 24, column 7 lines 32 – 44, et seq.).

Regarding claim 45, Hsu discloses recovering data on the basis of said transaction data (column 2 lines 13 – 24, column 7 lines 32 – 44, et seq.).

Claims 46 – 48, 50 – 54, 56 – 57, 59 – 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 5,237,681 issued to Kagan et al.

Regarding claim 46, Harvey discloses a directory system as claimed in claim 1.

Harvey does not explicitly disclose at least one adaptation segment dedicated to storage of adaptation data representing the usage of said memory segments.

However, Kagan discloses at least one adaptation segment dedicated to storage of adaptation data representing the usage of said memory segments (column 4 lines 29 – 31; 59 – 60, et seq.). At the time of the present invention, it would have obvious to a person of ordinary skill in the data processing art to combine the two references since the combination would have enabled the overall system to use memory resources more efficiently and eliminate the cost of adding memory to enhance a system.

Regarding claim 47, Kagan discloses the adaptation data represents the organization of data stored (column 4 lines 29 – 31, et seq.).

Regarding claim 48, Kagan discloses automatically reconfiguring said memory segments on the basis of usage of said memory segments (abstract lines 8 – 10, et seq.).

Regarding claim 50, Harvey discloses segregating one or more portions of said directory data on the basis of the number of instances of an entity of said directory data in a region of memory (page 32 lines 12 - page 33 line 3, et seq.).

Regarding claim 51, Harvey discloses segregating instances of an attribute type from a name space into two or more regions of memory (page 32 lines 12 - page 33 line 3, et seq.).

Regarding claim 52, Harvey discloses segregating instances of an object class into two or more regions of memory (page 32 lines 12 - page 33 line 3, et seq.).

Regarding claim 53, Harvey discloses segregating one or more portions of said directory data on the basis of access control data for said one or more portions of said directory data (page 32 lines 12 - page 33 line 3, et seq.).

Regarding claim 54, Harvey discloses aggregating directory data for a multi-object entity (page 32 lines 12 - page 33 line 10, et seq.).

Regarding claim 56, Kagan discloses accessing and managing said plurality of memory segments (column 4 lines 29 – 31; 59 – 60, et seq.).

Regarding claim 57, Kagan discloses generating statistical data in relation to entries (column 3 lines 65 – 68, column 4 lines 29 – 31; 59 – 60, et seq.).

Regarding claim 59, Harvey discloses segregating collective attributes of entries within a name space (Figure 2A – 2B, column 32 lines 12 - page 33 line 3, et seq.).

Regarding claim 60, Harvey discloses validating one or more certificate paths (Figures 2A – 2B, page 13, et seq.).

Regarding claim 61, Harvey discloses processing two or more objects as an entity (page 32 line 12 – page 33 line 10, et seq.).

Claims 127 – 129 and 138 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Publication Number 2004/0146048 issued to Cotte.

Regarding claim 127, Harvey discloses the process as claimed in claim 126.

Harvey does not explicitly disclose presence attributes of said users, said presence attributes including an attribute that indicates whether a user is using a direcly.

However, Cotte discloses presence attributes of said users, said presence attributes including an attribute that indicates whether a user is using a direcly (paragraph 386 – 389, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the above references since the combination would have enabled the overall system to realize advantages, such as privacy, ease of use, and/or data communications capabilities, offered by available communications environments.

Regarding claim 128, Cotte discloses generating one or more events in response to a change is said user presence attributes for each user (paragraphs 159, 343, 362, 386 - 389, et seq.).

Regarding claim 129, Cotte discloses attributes representing at least four of on-line, location, device type, profile, security level, and inform list (paragraphs 159, 343, 362, 386 - 389, et seq.).

Claim 138 is rejected based on the same rationale discussed in claim 129 rejection.

Claims 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey and Kagan, further in view of U.S. Patent Number 6,741,980 issued to Langseth et al.

Regarding claim 58, Harvey and Kagan disclose a directory system as claimed in claim 56.

Harvey and Kagan do not explicitly disclose generating notification data in response to modification of a monitored entry.

However, Langseth discloses generating notification data in response to modification of a monitored entry (column 1 lines 20 – 24, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the references since the combination would have enabled the overall system to deliver highly personalized and timely information at the right time when a predetermined condition occurs.

Claims 62 – 66, 70 – 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey and Kagan, further in view of Murthy.

Regarding claim 62, Harvey and Kagan disclose a direcotry system as claimed in claim 61.

Harvey and Kagan do not explicitly disclose sponsoring object and sponsored object.

Murthy discloses sponsoring object and sponsored object (column 4 lines 50 – 64, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the two references since Murthy's security data would have enabled Harvey and Kagan's overall system to provide uniform access control to relationally organized data and hierarchically organized data (column 3 lines 26 – 28, et seq.).

Regarding claim 63, Murthy discloses generating said one or more sponsored objects when a sponsoring object is generated (column 4 lines 10 – 14, et seq.).

Regarding claim 64, Murthy discloses initializing attributes and access controls of said sponsored objects when a sponsoring object is generated (column 4 lines 10 – 14; 50 – 64, et seq.).

Regarding claim 65, Murthy discloses generation one or more objects related to a user object when said user object is generated (column 4 lines 10 – 14; 50 – 64, et seq.).

Regarding claim 66, Murthy discloses user object representing a user, and said one or more objects representing one or more services for said user (column 4 lines 10 – 14; 50 – 64, et seq.).

Regarding claim 70, Murthy discloses determining whether a user is authorized to use one or more services (column 4 lines 10 – 14; 50 – 64, et seq.).

Regarding claim 71, Murthy discloses said determining in response to a directory search (column 4 lines 10 – 14; 50 – 67, et seq.).

Regarding claim 72, Murthy discloses said directory search is based on authorization matching rule, service and device properties, and an authorization token (column 4 lines 10 – 14; 50 – 64, et seq.).

Regarding claim 73, Harvey discloses performing a distributed object relational search in response to a search query including relational operators (page 29, et seq.).

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey and Kagan, further in view of U.S. Patent Number 5,566,331 issued to Irwin et al.

Regarding claim 49, Harvey and Kagan disclose a directory system as claimed in claim 48.

Harvey and Kagan do not explicitly disclose segregating data on the basis of access frequencies.

However, Irwin discloses segregating data on the basis of access frequencies (column 1 lines 61 – 66, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the

references since the combination would have enabled the overall system to provide efficient access to subsets of data, thereby improving processing time and reliability.

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 6,539,382 issued to Byrne et al.

Regarding claim 55, Harvey discloses a directory system as claimed in claim 1.

Harvey does not explicitly disclose storing portions of data in backing store.

However, Byrne discloses storing portions of data in backing store (column 2 lines 44 – 48, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the two references since the combination would have enabled the overall system to recognize performance benefit the first time data is accessed during a given time period.

Claims 67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey, Kagan and Murphy, further in view of U.S. Publication Number 2004/0146048 issued to Cotte.

Regarding claims 67 and 69, Harvey, Kagan and Murphy disclose a directory system in claim 66.

Harvey, Kagan and Murphy do not explicitly disclose a presence service, indicating whether a user is using a directory, and generating one or more events in response to a change in said user presence attributes for each user.

However, Cotte discloses a presence service and generating one or more events in response to a change in said user presence data (paragraph 386 – 389, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the above references since the combination would have enabled the overall system to realize advantages, such as privacy, ease of use, and/or data communications capabilities, offered by available communications environments.

Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey and Kagan, further in view of U.S. Publication Number 2004/0146048 issued to Cotte.

Regarding claim 68, Harvey and Kagan disclose a directory system in claim 1.

Harvey and Kagan do not explicitly disclose a user presence management component that maintains presence attributes of said user, said presence attributes including an attribute that indicates whether a user is using a directory.

However, Cotte discloses a user presence management component that maintains presence attributes of said user, said presence attributes including an attribute that indicates whether a user is using a directory (paragraph 386 – 389, et seq.). At the time of the present invention, it would have been obvious to a person of ordinary skill in the data processing art to combine the above references since the combination would have enabled the overall system to realize advantages, such as

privacy, ease of use, and/or data communications capabilities, offered by available communications environments.

Claim 102 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Publication Number 2002/0147893 issued to Roy et al (hereinafter "Roy").

Regarding claim 102, Harvey discloses the directory system of claim 1.

Harvey does not explicitly indicate virtual memory segments, said memory means including physical random access memory and backing store.

However, Roy discloses virtual memory segments, said memory means including physical random access memory and backing store (paragraph 2 lines 5 – 7, et seq.). At the time the invention was made, it would have been obvious to a person of ordinary skill in the data processing art to modify Harvey's directory system to incorporate Roy's use of virtual memory, thus extending available size of memory and also enabling multitasking systems to run multiple processes on the machine, where each process can be given access to the complete virtual address space of the processor.

Claims 103 and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Patent Number 6,647,393 issued to Dietterich et al. (hereinafter "Diet").

Regarding claim 103, Harvey discloses the directory system of claim 1.

Harvey does not explicitly indicate the memory segments are configured as shared memory.

However, Diet discloses memory segments configured as shared memory (column 3 lines 36 – 65, column 5 lines 11 – 12, et seq.). At the time the invention was made, it would have been obvious to a person of ordinary skill in the data processing art to modify Harvey's directory system to incorporate Diet's use of shared memory, thus improving centralized and hierarchical database directory service so that the system is able to replicate and move data dynamically in response to network activity and access patterns. This ability would optimize performance and minimize the time required to provide directory information (column 2 lines 64 - 67, et seq.).

Regarding claim 104, Diet discloses a plurality of virtual machines configured to access said memory segments of said shared memory (column 3 liens 36 - 65, et seq.).

Claim 107 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey in view of U.S. Publication Number 2002/0147893 issued to Roy.

Regarding claim 107, Harvey discloses the process claimed in claim 106.

Harvey does not explicitly disclose virtual memory segments.

However, Roy discloses virtual memory segments (paragraph 2 lines 5 – 7, et seq.). At the time the invention was made, it would have been obvious to a person of ordinary skill in the data processing art to modify Harvey's directory system to incorporate Roy's use of virtual memory, thus extending available size of memory and also enabling multitasking systems to run multiple processes on the machine, where

each process can be given access to the complete virtual address space of the processor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANGWOO AHN whose telephone number is (571)272-5626. The examiner can normally be reached on M-F 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/10/2008
/S. A./
Examiner, Art Unit 2166

/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168